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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/801,825	03/09/2001	Yasuhiko Kojima	P 276646	1431

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EXAMINER

CARRILLO, BIBI SHARIDAN

ART UNIT	PAPER NUMBER
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1746

DATE MAILED: 05/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/801,825

Applicant(s)

KOJIMA ET AL.

Examiner

Sharidan Carrillo

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-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 February 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 11-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-16 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2, 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-10 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for carboxylic acid, does not reasonably provide enablement for any cleaning gas containing a substance. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims.

The claims embrace an invention which contains any known cleaning gas, which Could/can be selected from literally thousands. It does not appear to be feasible that any cleaning gas would function in the present invention. Further, for one skilled in the art to reproduce the present invention (which must be possible, if the specification is adequate), there would clearly be undue experimentation to do so in an attempt to figure out which cleaning gases work and which ones do not.

3. Claims 1-10 rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The step of vaporizing the cleaning agent to form a cleaning gas is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976).

Claim 1 fails to include the critical step of vaporizing the cleaning agent, which is

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in a liquid state to form a cleaning gas. It should be noted that TFA exists in a liquid, not gaseous state. Therefore, a step of vaporizing the cleaning agent to form a cleaning gas is required and essential to the practice of the instant invention.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-10 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 9 are indefinite because it is unclear the structural relationship between the treatment equipment, the treatment chamber, and the substrate. It is unclear whether the substrate is present in the chamber as the chamber is treated with the cleaning gas. It is also unclear whether metal is being removed from the treatment chamber. Claim 9 is further indefinite because it is a duplicative of claim 1.

Claims 2 and 3 are indefinite because it is unclear what one of ordinary skill in the art would consider as a derivative of carboxylic acid. Claim 3 is indefinite because of the term "capable of". Claim 4 is indefinite because TFA occurs in a liquid state and applicant is claiming a cleaning gas. Claim 5 is indefinite because it is unclear what is meant by the film formation equipment. Claim 7 is indefinite because it is unclear what one of ordinary skill in the art would consider as promoting complexing of the prescribed metal.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 5-7, and 9-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Koide et al. (5993679).

In reference to claims 1 and 9, Koide et al. teach a method of cleaning metallic films within a thin film deposition apparatus by treating with a cleaning gas (hexafluoroacetylacetone) to complex the copper (col. 6, lines 30-65, col. 5, lines 25-40) and exhausting the gas via the exhaust system 14 (col. 7, lines 35-40). In reference to claim 5, refer to the abstract. In reference to claim 6, refer to col. 6, lines 35-65. In view of the indefiniteness of claim 7, refer to col. 5, lines 55-65. In reference to claim 10, refer to col. 6, lines 4-20.

8. Claims 1-5 and 7-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Caputo et al. (5413758).

In reference to claims 1 and 9, Caputo et al. teach cleaning the interior of a Sterilization chamber with a gaseous antimicrobial agent comprising a peracid and exhausting the cleaning gas from the chamber (col. 3, lines 15-20, lines 40-45, col. 4, lines 20-25, col. 6, lines 35-45, col. 9, lines 55-60, col. 11, lines 65-68). The limitations of directly complexing the prescribed metal is inherently met since Caputo et al. is performing the same method steps as that of the instant invention. In reference to

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claims 2-4, refer to col. 7, lines 7-21. In reference to claim 5 and in view of the indefiniteness, the limitations are met by the teachings of Caputo et al. In reference to claims 7-8, refer to col. 6, lines 45-55.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Grethe et al. teach trifluoroacetic acid as a peracid. Aoki teaches cleaning a substrate with a complexing agent. Fritsch et al. teach cleaning a CVD chamber with a diketone.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sharidan Carrillo whose telephone number is 703-308-1876. The examiner can normally be reached on M-F, 6:30am-3:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 703-308-4333. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7719 for regular communications and 703-308-7719 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Sharidan Carrillo
Primary Examiner
Art Unit 1746

bsc
April 30, 2003

A handwritten signature in black ink, appearing to read 'S. Carrillo', written in a cursive style.

SHARIDAN CARRILLO
PRIMARY EXAMINER